CLAIMS:

1. Receiver for estimation or compensation of phase imbalance or gain imbalance, the receiver utilizing a QPSK modulation and a modulation scheme based on a complex scrambling code, the receiver comprising means for estimating the phase imbalance or gain imbalance before synchronisation.

2. Receiver according to claim 1, wherein the means for estimating the phase imbalance or gain imbalance before synchronisation comprises means for generating at least one first ratio selected from the group consisting of a second ratio, a third ratio and a fourth ratio; wherein second first ratio is a ratio between a cross correlation of I and Q components ($<I,Q>$) of an incoming I/Q modulated signal and a mean value of a square of the I component ($<I^2>$); wherein the third ratio is a ratio between the cross correlation of the I and Q components and a square root of a product between a mean value of the square of the I component and a mean value of a square of the Q component ($(<I^2><Q^2>)^{1/2}$); and wherein the fourth ratio is a ratio between the mean value of the square of the Q component ($<Q^2>$) and the mean value of the square of the I ($<I^2>$) component.

3. Receiver according to claim 1, wherein the means for estimating the phase imbalance or gain imbalance before synchronisation comprises a low pass for low pass filtering the signals.

4. Receiver according to claim 1, further comprising means for compensating the phase imbalance or gain imbalance before synchronisation based on at least one first ratio selected from the group consisting of a second ratio, a third ratio and a fourth ratio; wherein second first ratio is a ratio between a cross correlation of I

and Q components (<I,Q>) of an incoming I/Q modulated signal and a mean value of a square of the I component (<I^2>); wherein the third ratio is a ratio between the cross correlation of the I and Q components and a square root of a product between a mean value of the square of the I component and a mean value of a square of the Q component ((<I^2><Q^2>)$^{1/2}$); and wherein the fourth ratio is a ratio between the mean value of the square of the Q component (<Q^2>) and the mean value of the square of the I (<I^2>) component.

5. Receiver according to claim 1, wherein the receiver is a WCDMA (UMTS) receiver and wherein a feed-forward scheme or a feed-back scheme is established in the receiver.

6. Receiver according to claim 1, wherein the estimation of the phase imbalance or gain imbalance is carried out iteratively.

7. Method for estimation or compensation of phase imbalance or gain imbalance in a receiver utilizing a QPSK modulation and a modulation scheme based on a complex scrambling code, the demodulation method comprising the step of: estimating the phase imbalance or gain imbalance before synchronisation.

8. Method according to claim 7, further comprising the step of: determining at least one first ratio selected from the group consisting of a second ration, a third ratio and a fourth ratio; wherein second first ratio is a ratio between a cross correlation of I and Q components (<I,Q>) of an incoming I/Q modulated signal and a mean value of a square of the I component (<I^2>); wherein the third ratio is a ratio between the cross correlation of the I and Q components and a square root of a product between a mean value of the square of the I component and a mean value of a square of the Q component ((<I^2><Q^2>)$^{1/2}$); and wherein the fourth ratio is a ratio between the mean value of the square of the Q component (<Q^2>) and the mean value of the square of the I (<I^2>) component.

9. Method according to claim 7, further comprising the step of compensating the phase imbalance or gain imbalance on the basis of the at least one first ratio such that a feed-forward scheme or a feed-back scheme is established.

10. Method according to claim 7, wherein the estimation of the phase imbalance or gain imbalance is carried out iteratively.

11. Computer program for estimation or compensation of phase imbalance or gain imbalance in a receiver utilizing a QPSK modulation and a modulation scheme based on complex scrambling code, the computer program comprising the step of: estimating the phase imbalance or gain imbalance before synchronisation.

12. Method of iteratively compensating a phase imbalance or gain imbalance in a receiver, the receiver utilizing a QPSK modulation and a modulation scheme based on a complex scrambling code, comprising the steps of:

a) determining an error function on the basis of samples of phase compensated in-phase components and quadrature components of a revived I/Q modulated signal;

b) filtering the error function;

c) integrating the filtered error function;

d) determining a modified error function by adding the integrated and filtered error function to a product of the integrated and filtered error function and a parameter based on speed and stability;

e) determining a corrected output signal of the I/Q components of the received signal on the basis of subsequent samples of phase compensated in-phase components and quadrature components of the received I/Q modulated signal and the modified error function; and

f) returning to step a).

13. Method of iteratively compensating a phase imbalance or gain imbalance in a receiver, the receiver utilizing a QPSK modulation and a modulation scheme based on a complex scrambling code, comprising the steps of:

a) determining an error function on the basis of squared samples of phase compensated in-phase components and quadrature components of a received I/Q modulated signal;

b) filtering the error function;

c) integrating the filtered error function;

d) determining a modified error function by adding the integrated and filtered error function to a product of the integrated and filtered error function and a parameter based on speed and stability;

e) determining a gain on the basis of a product of the modified error function and a factor;

f) determining a corrected output signal of the I/Q components of the received signal on the basis of subsequent samples of phase compensated in-phase components and quadrature components of the received I/Q modulated signal and the gain; and

g) returning to step a).